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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,451	04/01/2004	Elon Ray Coats	509/12	7779

27538 7590 03/05/2008  
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EXAMINER
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FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2615

MAIL DATE	DELIVERY MODE
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03/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/815,451	<b>Applicant(s)</b> COATS, ELON RAY	
	<b>Examiner</b> Devona E. Faulk	<b>Art Unit</b> 2615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply.**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 13-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/21/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second summing circuit must be shown and the second error voltage or signal needs to be clearly identified or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because of line quality. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 9 and 18 are objected to because of the following informalities: Claims 9 and 18 recite "... a second error voltage...". The examiner believes that the claim should recite "... a second error signal...". The specification discloses on page 12, ¶ 0033, that an error voltage is produced on line 128 and further down in the paragraph, "the error signal produced on line 128. Furthermore, a first error voltage is not recited

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previously in the claim. The examiner has interpreted the language as "... a second error signal...".

4. Claims 4-8,13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Specification***

5. The disclosure is objected to because of the following informalities: The specification discloses on page 12, ¶ 0033, that an error voltage is produced on line 128 and further down in the paragraph, " the error signal produced on line 128. There needs to be consistency regarding what is produced on line 128. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Dugan (US 4,864,627).

Regarding claim 1, Dugan discloses an apparatus, comprising:

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an automatic mixer circuit (master processor 718) operable to produce a control signal usable to adjust respective gains of a plurality of audio channels based on an aggregate of input levels of respective audio signals of the audio channels (master processor 718 produces output 715 which reads on control signal; 109 is the sum of the gain sense currents from all the inputs to 110; column 10, lines 33-45) ; and

a compression circuit operable to reduce the gain of a given one of the audio channels when an input level of the audio signal of that audio channel exceeds a threshold (gain limit calibration control 108, column 10, lines 33-37;column 10, lines 54-59), irrespective of whether the control signal of the automatic mixer would permit the gain to rise higher (irrespective means without regard to so this part of the limitation is deemed not relevant to the claim).

Regarding claim 2,Dugan discloses a plurality of compression circuits, each operable to reduce the respective gain of a respective one of the audio channels when an input level of the respective audio signal of the respective audio channel exceeds a respective threshold (Dugan teaches of a plurality of input processors for each channel and each input processor includes a gain limit calibration 108; Figure 7, 10, lines 33-37;column 10, lines 54-59), irrespective of whether the control signal of the automatic mixer would permit the respective gain to rise higher (irrespective means without regard to so this part of the limitation is deemed not relevant to the claim).

Regarding claim 3, Dugan discloses wherein at least one of: the threshold is variable, and a user may adjust the threshold (column 5, lines 25-30).

Regarding claim 10, Dugan discloses automatically mixing a plurality of audio channels by adjusting respective gains of the audio channels using a control signal based on an aggregate of input levels of respective audio signals of the audio channels (master processor 718 produces output 715 which reads on control signal; 109 is the sum of the gain sense currents from all the inputs to 110; column 10, lines 33-45); and reducing the gain of a given one of the audio channels when an input level of the audio signal of that audio channel exceeds a threshold (gain limit calibration control 108, column 10, lines 33-37; column 10, lines 54-59, irrespective of whether the control signal would permit the gain to rise higher (irrespective means without regard to so this part of the limitation is deemed not relevant to the claim)).

Regarding claim 11, Dugan discloses further comprising reducing the gain in each of at least some of the audio channels when an input level of the audio signal of the respective audio channels exceeds a respective threshold thereof Dugan teaches of a plurality of input processors for each channel and each input processor includes a gain limit calibration 108; Figure 7, 10, lines 33-37; column 10, lines 54-59), irrespective of whether the control signal would permit the gain to rise higher (irrespective means without regard to so this part of the limitation is deemed not relevant to the claim).

Regarding claim 12, Dugan discloses further comprising varying the threshold (column 5, lines 25-30).

***Allowable Subject Matter***

8. Claims 9 and 18 have allowable subject matter.

9. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 9 and 18, prior art Dugan discloses an automatic mixer circuit (master processor 718) operable to produce a control signal usable to adjust respective gains of a plurality of audio channels based on an aggregate of input levels of respective audio signals of the audio channels (master processor 718 produces output 715 which reads on control signal; 109 is the sum of the gain sense currents from all the inputs to 110; column 10, lines 33-45). Prior art Hagiwara (US 2004/0008851) discloses a digital compressor for multi-channel audio system. Prior art Yamazaki (US 6,501,717) discloses an apparatus and method for processing digital audio signals of plural channels to derive combined signals with over flow prevented. Prior art Generally the prior art teaches of mixing. Regarding claim 9, the prior art fails to disclose or make obvious a respective first summing circuit for each audio channel operable to produce a first error signal that is a difference of a signal indicative of the input level of the audio signal of the respective audio channel and the control signal from the automatic mixer circuit; a respective second summing circuit for each audio channel operable to produce a second error signal that is an aggregate of the signal indicative of the input level of the audio signal of the respective audio channel and a signal indicative of a threshold level for the respective audio channel; and a voltage controlled amplifier for each audio channel that is (i) responsive to the respective first error signal to reduce the gain of the respective audio channel when the control signal has a greater

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magnitude than the signal indicative of the input level of the respective audio signal, and (ii) responsive to the respective second error signal to reduce the gain of the respective audio channel when a magnitude of the signal indicative of the input level of the audio signal of the respective audio channel at least one of approaches and reaches a magnitude of the signal indicative of the threshold level for the respective audio channel, irrespective of whether the control signal of the automatic mixer would permit the gain to rise higher.

Regarding claim 18, the prior art or combination thereof fails to disclose or make obvious producing a first error signal in each of at least some of the audio channels that is a difference of a signal indicative of the input a level of the audio signal of the respective audio channel and the control signal; producing a second error signal in each of the at least some audio channels that is an aggregate of the signal indicative of the input level of the audio signal of the respective audio channel and a signal indicative of a threshold level for the respective audio channel; automatically responding to the respective first error signal to reduce the gain of the respective audio channel when the control signal has a greater magnitude than the signal indicative of the input level of the respective audio signal; and automatically responding to the respective second error signal to reduce the gain of the respective audio channel when a magnitude of the signal indicative of the input level of the audio signal of the respective audio channel at least one of approaches and reaches a magnitude of the signal indicative of the threshold level for the respective audio channel, irrespective of whether the control signal of the automatic mixer would permit the gain to rise higher.

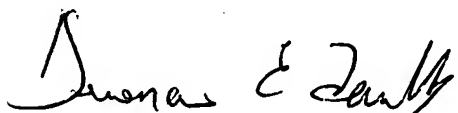
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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



/Devona E. Faulk/  
Examiner  
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